

GRADUATE MODEL

8D08102- Soil science and agrochemistry

BE ABLE TO:

- identify relevant issues in soil science and agrochemistry that require solutions;
- plan and organize scientific and information-retrieval research during field, vegetation, lysimetric, laboratory, and production experiments;
- conduct agrochemical soil surveys, collect soil and plant samples, and conduct agrochemical analysis of soils, plants, and fertilizers;
- determine fertilizer needs, the most effective timing and methods, and application and incorporation technologies;
- utilize modern laboratory instruments and computer equipment;
- use modern devices to determine the chemical composition of plants, soils, fertilizers, and ameliorants;

KNOW AND UNDERSTAND:

- Fundamental sciences, corresponding to PhD degrees;
- Soil types, their genesis and classification principles, composition, and properties;
- Physiological nutrition of plants, patterns of physiological and biochemical processes occurring in soil and plants associated with the use of chemicals;
- Modern methods for determining crop fertilizer requirements;
- Methods for setting up and conducting field, vegetation, and lysimetric experiments, office and laboratory work, methods for chemical analysis of soils and plants, and statistical processing of experimental data;
- Key trends in the development of agriculture and agricultural science in Kazakhstan, the CIS countries, and beyond.

BE COMPETENT IN THE FOLLOWING ISSUES:

- in the field of experimental research methodology;
- in innovative technical and technological production in all sectors of industry, including agriculture;
- modern methods of soil and plant research, and agrochemical services in agriculture.